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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/574,240	FUCHS ET AL.
Office Action Summary	Examiner	Art Unit	
	EMMANUEL MAGLO	2472	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2010*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-27,33-37,41-43,45,51,52,55-60,62,66-73,79-82 and 88-99* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *62-73* is/are allowed.

6)☐ Claim(s) *1-8,10-27,33-37,41-43,45,51,52,55-60,62, 79-82, 88-99* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the amendment filed on 01/06/2010.

Claims 1 and 13 have been amended.

Claims 1-8, 10-27, 33-37, 41-43, 45, 48, 51-52, 55-60, 62, 66-73, 79-82 and 88-99 are pending in

the application.

1.   Applicant's request for reconsideration of the finality of the rejection of the last Office

action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

       1.   Determining the scope and contents of the prior art.
       2.   Ascertaining the differences between the prior art and the claims at issue.
       3.   Resolving the level of ordinary skill in the pertinent art.
       4.   Considering objective evidence present in the application indicating obviousness
               or nonobviousness.

1.   Claims 1-8, 10-27, 33-36, 88-98 rejected under 35 U.S.C. 103(a) as being unpatentable

over Yaport et al. (US 2002/0178221 A1), hereinafter Yaport in view of Cai et al. (US

2005/0030966 A1), hereinafter referred to as Cai.

Regarding claim 1, Yaport discloses *a method of multicasting a data file,* (see title, abstract and

fig.2), *comprising:*

        transmitting a notification on an upcoming multicast transmission to a plurality of

receivers designated to receive the multicast transmission, (transmission: distribution for

multicast data: [0033]-[0047], for notification, applicable to users of cellular phones, [0089],

[0090]),

        transmitting a data file, (data is transmitted to the client 104), *from a data server,*

([0033], [0036], [0037]: server 100), *on the one or more multicast channels,* (multicast data

transmission means such as a router 102), *without the data server receiving acknowledgements*

from the receivers on whether they received the notification, ([0035], [0042], [0081], [0088]:

data transmission without client-server sessions and acknowledgement)

        determining at least one of the plurality of the receivers that received at least a portion of

the data file, (the information is transmitted by portions, known as protocol data units: [0042] for

delivery of small portions).

Yaport does not explicitly disclose the steps of:

        determining receivers designated to receive the multicast transmission that did not

receive at least a portion of the data file

        attempting to deliver the data file to the determined receivers

Cai teaches Multimedia Broadcast Multicast Service (MBMS) service where one use of MBMS

services may be to broadcast an event that includes multiple communication sessions, that is to

transmit portion of the data for providing missing data or replays of data to subscribers. Cai

teaches, fig. 4A step 424, determining whether a second set of data (or portion of data) is

received by the subscriber), [0048], [0052], that the MS has not previously received. Cai further

discloses an attempt to deliver the data to the MS; for, [0054], by providing a Session

Description in the sets of data packets conveyed to the MSs 102-104 associated with subscribers

to the MBMS service and in an MBMS notification conveyed to the MSs, communication

system 100 permits the MSs to determine whether to receive re-data broadcasts by the MBMS

service

It would have been obvious to a person of ordinary skill at the time the invention was made to

implement Yaport with the teaching of Cai so that clients can subscribe to a particular or selected

multicast group at any time and missing data or replays of data to subscribers is provided.

 Regarding claim 2, Yaport discloses *transmitting the notification comprises transmitting on a*

multicast or broadcast channel, [0031]

Regarding claim 3, Yaport discloses *transmitting the notification comprises transmitting a*

unicast notification to each of the receivers on the designated receivers, ([0020]: fig. 1 is a very

schematic representation of an existing system for unicast connection)

Regarding claim 4, Yaport discloses *transmitting the notification comprises transmitting*

substantially only to designated receivers, (by sending multicast data to members of the

multicast group: the users who agree with the service provider or operator on the conditions

regarding the provision of the multicast service and who indicate willingness or readiness to
receive the multicast service are the designated receivers, [0040]).

Regarding claim 5, Yaport discloses *transmitting the notification comprises transmitting a
message open also to non-designated receivers,* (the multicast data source is the server 100 (figs.
6-9) assuring Multimedia Broadcast Multicast Service (MBMS); thus in the broadcast mode the
data is transmitted to all users in one or more broadcast areas, (this includes also *non-designated
receivers*).

Regarding claim 6, Yaport discloses *the notification indicates the one or more channels on
which the multicast transmission will be provided,* ([0090] the immediate notification indicates
that one client may have capability of receiving the selected information in parallel mode but via
several different speed channels simultaneously).

Regarding claim 7, Yaport discloses *tuning to the multicast channel by at least one of the
receivers comprises determining by each receiver that receives the notification whether to tune
onto the one or more multicast channels,* ([0090])

Regarding claim 8, Yaport discloses *determining by each receiver that receives the notification
whether to tune onto the one or more multicast channels comprises determining, from the
notification, a group to which the upcoming multicast transmission belongs and determining
whether to tune onto the one or more multicast channels according to the determined group,*
(note *group* can vary depending on the nature of the service, any client can subscribe to a
particular multicast group for receiving the data; for example reference numeral 44 is the
Internet, and 42-1, 42-2, 42-3 are clients of group 42; 40-1, 40-2 are clients of group 40, etc.).

Regarding claim 10, Yaport discloses *determining by each receiver that receives the notification*

whether to tune onto the one or more multicast channels comprises determining based on input

received from a user responsive to the notification, ([0063]: the client 104-1 receives the

randomly selected initial PDU in response to the request R1, as "On Demand" attempt to

transport the program or show from a central repository (server) to the user (client) in response to

his/her request. To initiate the request, the user selects from a list of candidate programs and

requests that the system deliver the selected program.).

Regarding claim 11, *the receivers do not transmit acknowledgements of reception of the*

notification, at all, (Yaport discloses, [0017], [0081], [0088]: connection is confirmed by

acknowledgement, and the data is transmitted to the client 26-1 via the established connection;

Regarding claim 12, Yaport does not explicitly disclose that *the receivers cannot transmit uplink*

messages to the data server, without stopping to listen to the one or more multicast channels.

Cai discloses [0028] uplink 135 that includes multiple communication channels, comprising

[0031], one or more of multiple time slots in a same frequency bandwidth.

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was

made to implement Yaport with the teaching of Cai so that receivers can particularly select one

or more multicast group.

Regarding claim 13, *attempting to deliver the data file comprises delivering the data file in a*

unicast transmission to each of the determined receivers.

Yaport discloses data distribution over the channels of one of the channel groups, e.g., 130, so as

to transfer to clients of a particular group of multicast groups, [0031] for, a plurality of individual

sessions occurs between individual clients and the server(s) consisting of unicast transmission:

[0014], [0016], [0020].

Regarding claim 14, *attempting to deliver the data file comprises delivering the data file in a multicast transmission to a plurality of the determined receivers*, (by sending multicast data to members of the multicast group: the users who agree with the service provider or operator on the conditions regarding the provision of the multicast service and who indicate willingness or readiness to receive the multicast service are the designated receivers).

Regarding claim 15, *attempting to deliver the data file comprises providing a notification message inviting the receivers to download the transmission on a unicast connection, to the determined receivers.*

Yaport discloses data distribution over the channels of one of the channel groups, e.g., 130, so as to transfer to clients of a particular group of multicast groups, [0031] for, a plurality of individual sessions occurs between individual clients and the server(s) consisting of unicast transmission: [0014], [0016], and [0020].

Regarding claim 16, *at least 80% of the designated receivers establish only a single unicast connection related to receiving the data file.*

Yaport discloses data distribution over the channels of one of the channel groups, e.g., 130, so as to transfer to clients of a particular group of multicast groups, [0031] for, a plurality of individual sessions occurs between individual clients and the server(s) consisting of unicast transmission: [0014], [0016], [0020].

Regarding claim 17, *substantially all of the designated receivers establish only a single unicast connection related to receiving the data file.*

Yaport discloses data distribution over the channels of one of the channel groups, e.g., 130, so as to transfer to clients of a particular group of multicast groups, [0031] for, a plurality of individual

sessions occurs between individual clients and the server(s) consisting of unicast transmission:

[0014], [0016], [0020].

Regarding claim 18, *all of the designated receivers establish up to two single unicast*

connections related to receiving the data file.

Yaport discloses data distribution over the channels of one of the channel groups, e.g., 130, so as

to transfer to clients of a particular group of multicast groups, [0031] for, a plurality of individual

sessions occurs between individual clients and the server(s) consisting of unicast transmission:

[0014], [0016], [0020].

Regarding claim 19, Yaport does not explicitly disclose *at least a portion of the data file is*

encrypted, requiring one or more decryption keys identified in the transmitted data file.

Cai discloses [0020], [0030], [0036], [0050] a keypad that includes multiple keys via which a

user of the MS may input an instruction to the MS. Therefore, it would have been obvious to a

person of ordinary skill at the time the invention was made to implement Yaport with the

teaching of Cai so as to conveys a response to server 118 indicating a desire of a user of the MS

to subscribe to the event.

Regarding claim 20, Yaport does not explicitly disclose *the receivers request the one or more*

keys after receiving the data file.

Cai discloses [0020], [0030], [0036], [0050] a keypad that includes multiple keys via which a

user of the MS may input an instruction to the MS. Therefore, it would have been obvious to a

person of ordinary skill at the time the invention was made to implement Yaport with the

teaching of Cai so as to conveys a response to server 118 indicating a desire of a user of the MS

to subscribe to the event.

Regarding claim 21, Yaport does not explicitly disclose *at least one of the receivers requests the*

one or more keys,

Cai discloses a keypad that includes multiple keys [0020], [0030], [0036], [0050], that the user

may select or a key of a keypad that a user may depress to generate a response.

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was

made to implement Yaport with the teaching of Cai so as to conveys a response to server 118

indicating a desire of a user of the MS to subscribe to the event.

Regarding claim 22, Yaport does not explicitly disclose *the receivers request the one or more*

keys after determining that they received sufficient data to allow reconstruction of the data file,

Cai, [0050], discloses that the retrieved message may instruct the user to select one key of a

keypad if the user's response is affirmative and to select another key of the keypad if the user's

response is negative; therefore, the retrieved message is thus displayed by processor 206 and the

message is retrieved (reconstructed) on the display screen of user interface 210.

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was

made to implement Yaport with the teaching of Cai so as to conveys a response to server 118

indicating a desire of a user of the MS to subscribe to the event.

Regarding claim 23, Yaport discloses the claimed invention except that *the keys are received on*

a single unicast connection along with any supplementary data required, not received during the

multicast transmission.

Yaport discloses the supplementary data reception, (PDUC1, PDUC2: they are intended for

improving reliability of data transmission, [0045]-[0046]; data distribution over the channels of

one of the channel groups, e.g., 130, so as to transfer to clients of a particular group of multicast

groups, [0031] for, a plurality of individual sessions occurs between individual clients and the server(s) consisting of unicast transmission: [0014], [0016], [0020].

Regarding claim 24, Yaport does not explicitly disclose the steps of *receiving acknowledgements from receivers that received the notification or at least a portion of the data file, after transmitting the data file, wherein determining receivers designated that did not receive at least a portion of the data file is performed by determining receivers from which acknowledgments were not received.*

Cai teaches Multimedia Broadcast Multicast Service (MBMS) service where one use of MBMS services may be to broadcast an event that includes multiple communication sessions, that is to transmit portion of the data for providing missing data or replays of data to subscribers. Cai teaches, fig. 4A step 424, determining whether a second set of data (or portion of data) is received by the subscriber), [0048], [0052], that the MS has not previously received. Cai further discloses an attempt to deliver the data to the MS; for, [0054], by providing a Session Description in the sets of data packets conveyed to the MSs 102-104 associated with subscribers to the MBMS service and in an MBMS notification conveyed to the MSs, communication system 100 permits the MSs to determine whether to receive re-data broadcasts by the MBMS service

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Yaport with the teaching of Cai so that clients can subscribe to a particular or selected multicast group at any time and missing data or replays of data to subscribers is provided.

Regarding claim 25, Yaport does not explicitly disclose *receiving the acknowledgements comprises receiving a request for decryption keys.*

Cai discloses, [0030], [0036], [0050], The retrieved message may further include a "Yes" response and a "No" response when the display screen of user interface 210 is a touch screen, or may instruct the user to select one key of a keypad if the user's response is affirmative and to select another key of the keypad if the user's response is negative. Therefore, it would have been obvious to a person of ordinary skill at the time the invention was made to implement Yaport with the teaching of Cai so as to conveys a response to server 118 indicating a desire of a user of the MS to subscribe to the event.

Regarding claim 26, *receiving the acknowledgements comprises receiving a request for supplementary data not received during the multicast transmission.*

Yaport discloses receiving multicast data in the form of protocol data units PDU1, PDU2, PDU3, PDU4 , so that if any informational PDU such as PDUC1, PDUC2 . . . is lost during the transmission, the control protocol data units of all data segments will allow to restore the missing data , [0046].

Regarding claims 27, *receiving the acknowledgements comprises receiving over a different network than the network on which the data file was multicast.*

Yaport discloses, [0017], if for some reason the acknowledgement is not received, the server will retransmit the data within two minutes.

Regarding claim 33, *attempting to deliver the data file to the determined receivers comprises delivering on a different network than the network on which the data file was multicast.*

Cai teaches, fig. 4A step 424, determining whether a second set of data (or portion of data) is received by the subscriber), [0048], [0052], that the MS has not previously received. Cai further discloses an attempt to deliver the data to the MS; for, [0054], by providing a Session

Description in the sets of data packets conveyed to the MSs 102-104 associated with subscribers

to the MBMS service and in an MBMS notification conveyed to the MSs, communication

system 100 permits the MSs to determine whether to receive re-data broadcasts by the MBMS

service

It would have been obvious to a person of ordinary skill at the time the invention was made to

implement Yaport with the teaching of Cai so that clients can subscribe to a particular or selected

multicast group at any time and missing data or replays of data to subscribers is provided.

 Regarding claim 34, *the notification indicates a plurality of categories to which the data file*

relates and the plurality of receivers comprises receivers designated to receive data belonging to

different ones of the plurality of categories, (Yaport discloses capability of receiving the selected

information or notification in parallel mode but via several different speed channels

simultaneously, [0090]: this indicates the plurality of categories relates such as text, audio, video,

and interlaced computer programs; [0005])

Regarding claim 35, *transmitting the data file comprises transmitting a plurality of sub-files in a*

plurality of separate transmission sessions, ([0035]: file is divided into data segments, the data

segments are distributed between data transmission units 114 and 116: [0037])

Regarding claim 36, *transmitting the data file comprises transmitting a plurality sub-files on a*

plurality of different channels.

Yaport discloses the data segments are distributed between data transmission units 114 and 116:

[0037])

2.   Claims 37, 41-43, 45, 48, 51, 52, and 55 rejected under 35 U.S.C. 103(a) as being

unpatentable over Xu et al. (US 2006/0166653 A1), in view of Dillon (US 6728878).

Regarding claim 37, Xu discloses *a method of receiving a data file provided in a multicast*

transmission, (fig. 2 multicast data reception step 218), *comprising:*

        tuning, by a mobile station, onto a multicast channel, (fig. 1 and [0038] the message to

inform the MS of upcoming multicast session: note fig. 3 step 308. When this notification

arrives, the mobile station changes to the multicast reception mode, (tune) where it listens to the

MBMS data channel in order to receive the service data (step 308) transmitted on that channel,

[0060], [0061]);

        receiving at least one encrypted packet which can be used in reconstructing the data file,

(note MS receiving the service notification [0068], also receives a Message Authentication Code

(MAC) included in a message to provide authenticity; this indicates encrypted packet. Thus, the

MAC is a value derived from the message by a key-dependent one-way function (such as the

widely used HMAC). Only the party possessing the key can create or verify the MAC), *on the*

multicast channel; and

receiving at least one key required for decrypting the at least one packet after receiving a

sufficient number of packets for reconstructing the data file, ([0069], [0070], [0071], [0072]: a

mobile station needs a key to unlock an encrypted packet.

Although Xu discloses receiving a key for decrypting multicast data, Xu does not explicitly

disclose receiving the key as required in the claim.

Dillon, in a document delivery system, discloses each document sent from broadcast center 150

is decrypted with a different key (to decrypt the received packets), packetized, encrypted

documents, col. 6 lines 61-67. With reference to the timing chart of figs. 5and 6, and the Table of

cols. 7 and 8, Dillon further discloses that each document sent from broadcast center 150 is

decrypted with a key received in the announcement message: see F5 and F6 for receiving the key

and receiving and decrypting packet with the key). It would have been obvious to a person of

ordinary skill at the time the invention was made to implement Xu with the teaching of Dillon so

that a client (a user) determines which document to receive and for which only he or she is

charged for.

Regarding claim 41, *requesting the at least one key after receiving a sufficient number of packets*

for reconstructing the data file and wherein receiving the at least one key is performed

responsive to the requesting, (Xu discloses the data is transmitted to all users in one or more

broadcast areas, whereas in the multicast mode the data is transmitted to a multicast group in a

multicast area, [0069]).

 Dillon discloses that each document sent from broadcast center 150 is decrypted with a key

received in the announcement message: therefore see F5 and F6 for receiving the key and

receiving and decrypting packet with the key). It would have been obvious to a person of

ordinary skill at the time the invention was made to implement Xu with the teaching of Dillon so

that a client (a user) determines which document to receive and for which only he or she is

charged for.

Regarding claim 42, Xu discloses *the requesting of the at least one key is performed responsive*

to a user instruction, (following the user's authorization, [0066], the MAC is a value derived

from the message by a key-dependent one-way function, [0068]).

Regarding claim 43, Xu discloses *at least a portion of the data file is not encrypted and the user*

instruction is received after displaying the non-encrypted portion of the file to the user ([0068]: a

Message Authentication Code (MAC) can be included in a message to provide authenticity

without secrecy (that is non encrypted); this forms the user instruction received by the user).

 Dillon discloses, see table of col. 8, the function of displaying a catalog and processing

document requests. It would have been obvious to a person of ordinary skill at the time the

invention was made to implement Xu with the teaching of Dillon so that a client (a user)

determines which document to receive and for which only he or she is charged for.

Regarding claim 45, *the non-encrypted portion of the file is received before any encrypted*

portion of the data file, (Xu disclose receiving the key, corresponding to a non-encrypted

portion, before the encrypted portion is received because, [0068], a Message Authentication

Code (MAC) can be included in a message to provide authenticity without secrecy. The MAC is

a value derived from the message by a key-dependent one-way function (such as the widely used

HMAC). Only the party possessing the key can create or verify the MAC).

Regarding claim 48, Xu discloses *the file includes a plurality of different portions requiring*

different keys for decryption and wherein the keys required for at least one portion are received

after displaying at least one other portion, ([0070] However, a different key is used for signing

the messages and verifying the signatures. A digital signature mechanism is typically

implemented using public-key cryptography, utilizing the widely used RSA algorithm, for

example. [0075]: In order to be able to verify the signatures of the mobile stations, the RNC has

to be provided with a signature verification key of one or more trusted CAs. In case more than

one CA is used, their signature keys can either be configured separately to the RNC or certificate

hierarchy can be utilized. For certificate hierarchy, just a single signature verification key of a

top-level CA needs to be configured to the RNC: This key is then used to authenticate the

certificates of lower-level CAs, each containing the signature verification key of that CA. With

the hierarchical certificates, a mobile station has to include the certificate of a lower-level CA

with each membership report)

Regarding claim 51, Xu discloses *tuning onto the multicast channel is performed responsive to*

receiving a notification on an upcoming multicast transmission and responsive to a

determination that the upcoming multicast transmission matches a subscription profile of the

receiver, (the notification to inform the MS of upcoming multicast session: note fig. 3 step 308:

(*responsive to the notification*), when this notification arrives, the mobile station changes to the

multicast reception mode, where it listens to the MBMS data channel in order to receive the

service data (step 308) transmitted on that channel, [0060])

Regarding claim 52, Xu discloses *the determination that the upcoming multicast transmission*

matches a subscription profile of the receiver comprises consulting a multicast subscription

profile stored on the receiver, (fig. 2 is illustrates the determination (procedure) that the

upcoming multicast transmission matches a subscription profile of the receiver for the

establishment for the multicast service. Thus, when a mobile station receives this notification, it

initiates a response process if it is a member of the group by checking its multicast subscription

profile, [0045], [0046])

Regarding claim 55, Xu discloses *acknowledging receipt of the at least one key, in a manner*

which allows charging for the data file, ([0057]): all the mobile stations will automatically send a reply. The operator may wish to do this for charging purposes, for example, [0068]: a Message Authentication Code (MAC) can be included in a message to provide authenticity The MAC is a value derived from the message by a key-dependent one-way function (such as the widely used HMAC). Only the party possessing the key can create or verify the MAC, therefore the mobile station acknowledges the possessing the key for charging purposes.

3.   Claims 56-60 and 62 rejected under 35 U.S.C. 103(a) as being unpatentable over Xu, in view of Yaport.

Regarding claim 56, Xu discloses *a method of multicasting a file, comprising:*

      encrypting the file using one or more keys, ([0071]: a different signing key can be provided for each authorized mobile station (source authentication) or the same signing key can be shared by all authorized mobile stations (group authentication))*;*

      transmitting the encrypted file to a plurality of receivers in a multicast transmission, (note a message authentication code (MAC) is included in the transmitted message, therefore the need for a key distribution center (KDC) ensures that different signing key can be provided for each authorized mobile station to decrypt the encrypted file, [0069]-[0072]));

and providing at least one of the plurality of receivers with one or more decryption keys required for decrypting the transmitted encrypted file, after the file was transmitted, (the mobile station obtains a signing key (signing keys provided to the mobiles, from the KDC, for the purpose of decrypting the file, [0071]-[0074]). Note further that [0068], a Message Authentication Code (MAC) can be included in a message to provide authenticity without secrecy. The MAC is a

value derived from the message by a key-dependent one-way function (such as the widely used

HMAC). Only the party possessing the key can create or verify the MAC, thus showing that the

key is provided after the message is received.

Although Xu disclose the message, Xu does not explicitly disclose it as a data file. Yaport

discloses data files for, [0037], the entire information available to the clients consists of

individual data items known as files corresponding the message. Therefore, it would have been

obvious to a person of ordinary skill at the time the invention was made to implement Xu with

the teaching of Yaport so that the key is provided after the message is received.

Regarding claim 57 Xu discloses *providing at least one of the receivers with at least one*

decryption key for the encrypted file, before transmitting the encrypted file, (the mobile station

obtains a signing key; signing keys provided to the mobiles, particularly a different key can be

assigned to each authorized mobile station, [0069], before the transmission of the encrypted file

because, [0068], a Message Authentication Code (MAC) can be included in a message to provide

authenticity without secrecy.).

Regarding claim 58, Xu discloses *receiving from the at least one receivers provided with the*

decryption keys before transmitting the encrypted file, acknowledgement messages,

[0072]: a mobile station needs a key to unlock an encrypted packet.

Regarding claim 59, Xu discloses *the acknowledgement messages are received at least 10*

*minutes after the transmission of the encrypted file is complete*d, (note, [0051] discloses the

moment for the response to the membership query is determined by setting a timer to a random

value between zero and the maximum delay value. The idea here is to determine a member-

specific response moment for each group member present in the cell. The response moment can

be determined in many different ways. Instead of setting a timer to a random value, each mobile

station can, for example, calculate its response moment by means of an algorithm having at least

one input specific to each mobile station)

Regarding claim 60, Xu discloses *the at least one of the receivers provided with the decryption*

keys before transmitting the encrypted file are selected at least partially responsive to previous

behavior of the receivers, (note fig. 3 step 308: (*responsive to the notification*), when this

notification arrives, the mobile station changes to the multicast reception mode, where it listens

to the MBMS data channel in order to receive the service data (step 308) transmitted on that

channel, [0060]; in addition, [0061], [0071], a different signing key, (decryption keys), can be

provided for each authorized mobile station before the transmission of the encrypted file).

Regarding claim 62, *the at least one of the receivers provided with the decryption,* ([0070],

[0071], [0072] and [0073]: note, by first obtaining a signing key and a certificate containing the

corresponding signature verification key from a Key Distribution Center (KDC) which creates

the MAC keys and delivers them securely (with authentication and secrecy) to the authorized

mobile stations, at least a portion of the data file is thus encrypted), *keys before transmitting the*

encrypted file are selected at least partially responsive to the number or percentage of

acknowledgements provided by the receivers in a given period,

Xu teaches the claimed invention, (transmitting the encrypted file responsive to the notification,

fig. 3 step 308) but does not explicitly disclose the transmission responsive to the number or

percentage of acknowledgements provided by the receivers in a given period. Xu teaches further,

a response time period for the receivers for, [0057]: the maximum value of the response time

may also be known to the mobile station in advance.

Yaport teaches, [0017] and fig. 1, that for the data to be transmitted to the clients, the protocol

the connection is confirmed by acknowledgement so that reception of the information by the

client must be confirmed by a separate acknowledgment for each separate protocol data unit.

Therefore it would have been obvious to a person of ordinary skill at the time the invention was

made to implement Xu with Yaport, to differentiate receivers, or to assure QoS based on

percentage of acknowledgements provided.

4.   Claims 79, 82 rejected under 35 U.S.C. 103(a) as being unpatentable over Siren

(2002/0006801 A1) in view Sasvari et al. (US 2004/0057376 A1),

Regarding claim 79, Siren discloses *a method of transmitting multicast data in a cellular*

network, comprising:

        providing data for multicast transmission, ([0046], [0047], [0049], [0050]), *to a plurality*

of base stations, having different bandwidth amounts for multicast transmission, at a same rate

([0035]: different bandwidth allocation to a plurality of base stations in a wireless network to

assure group or multicast transmission over the wireless network),

Siren teaches the claimed invention except explicitly

        dropping data by one or more of the base stations, as required, so that the data can be

transmitted by each of the base stations on its respective allocated bandwidth for multicast

transmission; and

transmitting the non-dropped data such that the data is transmitted by all the base stations

substantially synchronously.

Sasvari discloses, [0011], [0023], in a communications system a finite bandwidth for the communication of traffic of a plurality of users; the communications system further comprises packet discard means for discarding (or dropping) packets, on an individual basis, in a pseudo-random fashion so that data transmitted to the system has a finite bandwidth for carrying the traffic;

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was made to modify Siren with the teaching of Sasvari, to maintain the communication of traffic of a plurality of users in which the system has a finite bandwidth for carrying the traffic.

5.   Claim 80 rejected under 35 U.S.C. 103(a) as being unpatentable over Siren in view Sasvari and further in view of Okada (US 2002/0012327 A1).

Regarding claim 80, Siren discloses the base stations except explicitly:

> *the base stations use a small buffer, having room for at most five packets, for the provided multicast data,*

Okada discloses, fig. 25, a base station 2501, as a general base station that includes a forwarding unit 2505 which has a buffer 2504 for forwarding to a multicast address. [0223]-[0225]: the buffer stores packets which is transmitted or forwarded to other locations. Therefore, it would have been obvious to a person of ordinary skill at the time the invention was made to modify Siren in view of Sasvari with the teaching of Okada to maintain flow performance based on the buffer state of the base station.

6.   Claims 81 and 99 rejected under 35 U.S.C. 103(a) as being unpatentable over Siren in

view of Tasman et al (2002/0080755 A1).

Regarding claims 81 and 99, *providing the data, comprises providing data protected with a*

forward error correction code,

Siren teaches the claimed invention except explicitly the data provided does not comprise

providing data protected with a forward error correction code.

Tasman, by disclosing that communication occurs from the server to the client without

acknowledgement or confirmation, many telephone and computer communication channels

presume that data is lost if no acknowledgement is received and retransmit the lost data, resulting

in forward error correction. It would have been obvious to a person of ordinary skill at the time

the invention was made to modify Siren with Tasman to incorporate forward error correction

(FEC), for (FEC) software may reduce the number of retransmissions by alleviating some

portion of the data packet loss.

Regarding claim 82, Siren discloses transmitting supplementary data to receivers that request

data they did not receive in the multicast transmission over point-to-point connections, ([0035]

channels allocated to individual point-to-point user channels having a single recipient).

Regarding claim 88, Yaport discloses a data server, (figs. 6-9 server **100**), comprising:

an input interface for receiving files to be multicast, ([0033]: as shown in this drawing, the

system of the invention, as an existing system of FIG. 2, consists of a server **100**, a multicast data

transmission means such as a router 102, groups of clients 104-1,104-2,104-3 . . . 104-n with

respective routers 106-1,106-2,106-3, . . . 106-n and the Internet 107 located between the routers

of the groups of clients 104-1,104-1,104-3 . . . 104-n and the router 102);

> *an output interface for providing signals for transmission to receivers,* ([0033]),

Yaport discloses a data transmission server 100 for multicast data transmission, (fig. 2), [0031],

[0032], [0035], to recipients without acknowledgment, thus [0035], [0047]: the multicast

distribution does not need confirmation: the server 100 and the method of multicast data

transmission without client-server sessions and acknowledgement). In addition Yaport teaches

that information is transmitted by portions, known as protocol data units, [0044]. In addition,

[0046], the control protocol data units of all data segments will allow to restore the missing data

(portion of the data or PDU such as PDUC1, PDUC2) lost during the transmission.

Yaport does not disclose an *input interface, an output interface, and a controller* as required by

the claim.

Cai discloses a server 118 coupled to a RAN controller 114 via a support node receives a first set

of MBMS data from an MBMS content provider, [0020],

> *a controller* ([0040]: fig. 1, the Radio Access Network further comprises Radio Network

Controllers (RNC) 114), *adapted to generate a notification on an upcoming multicast*

transmission, (a multicast service notification is transmitted to mobile stations, thereby

informing members of the multicast group of an upcoming multicast sessions), *responsive to a*

received file, to provide the notification through the output interface for transmission and to

provide the received file for transmission, (notifying the mobile stations of incoming multicast

data), *without receiving acknowledgements from the receivers on whether they received the*

notification, to determine receivers designated to receive the multicast transmission that did not

receive at least a portion of the data file and to attempt to deliver the data file to the determined

receivers.

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was

made to implement Yaport with the teaching of Cai so that clients can subscribe to a particular or

selected multicast group at any time.

Regarding claim 89, Yaport describes *a mobile station,* ([0089]: users of cellular phones: not

shown) *comprising:*

    a receiver, and

    a processor adapted to tune the receiver to receive data on a plurality of multicast

channels and to combine the data received on the plurality of channels into a single multimedia

file,

    Yaport however does not disclose a receiver and a processor as required by the claim.

    Cai discloses a mobile station shown in fig. 1 and further in a block diagram of fig. 2,

comprising a receiver 202, and a processor 206. Furthermore, Cai teaches that the processor

receives a plural sets of MBMS data, [0023]. The system assures a transmission (or rebroadcast

of a Multimedia Broadcast Multicast Service (MBMS) service to the subscribers).

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was

made to implement Yaport with Cai, to allow data to be transmitted from a single source point to

multiple endpoints.

Regarding claim 90, Yaport discloses *the data received on the plurality of channels,* ([0043], and

fig. 4), *comprises different multimedia types on different channels,*

Regarding claim 91, *determining the receivers that did not receive at least a portion of the data*

file comprises determining receivers that did not receive the data file at all.

Yaport teaches the claimed invention except explicitly determining the receivers that did not

receive at least a portion of the data file comprises determining receivers that did not receive the

data file at all.

Cai teaches Multimedia Broadcast Multicast Service (MBMS) service where one use of MBMS

services may be to broadcast an event that includes multiple communication sessions, that is to

transmit portion of the data for providing missing data or replays of data to subscribers. Cai

teaches, fig. 4A step 424, determining whether a second set of data (or portion of data) is

received by the subscriber), [0048], [0052], that the MS has not previously received. Cai further

discloses an attempt to deliver the data to the MS; for, [0054], by providing a Session

Description in the sets of data packets conveyed to the MSs 102-104 associated with subscribers

to the MBMS service and in an MBMS notification conveyed to the MSs, communication

system 100 permits the MSs to determine whether to receive re-data broadcasts by the MBMS

service

It would have been obvious to a person of ordinary skill at the time the invention was made to

implement Yaport with the teaching of Cai so that clients can subscribe to a particular or selected

multicast group at any time and missing data or replays of data to subscribers is provided.

Regarding claim 92, *transmitting a data file on the one or more multicast channels comprises*

transmitting the file data a plurality of times, (Yaport teaches [0037]: data or information is

divided into a plurality of data segments allowing for a plurality of individual sessions occurring

between individual clients and the server(s)).

Regarding claim 94, Yaport teaches *providing the notification message comprises sending a*

message to a mail-box of the mobile station, (two-way data communication between the

browsing user, who has a specific electronic address or destination, and the web page, which also

has a specific electronic destination: [006])

Regarding claim 95, Yaport teaches the claimed invention except explicitly *the notification*

message comprises providing in an SMS message.

Cai discloses,[0037], [0037] that the service announcement may be sent in any over-the-air

format, such as via a broadcast over paging channel 131, via a short message service (SMS), or

via a multicast. It would have been obvious to a person of ordinary skill at the time the invention

was made to modify Yaport with the teaching of Cai for integration of SMS message allowing

the interchange of short text messages.

Regarding claim 96, *at least 80% of the designated receivers establish only a single unicast*

connection related to receiving the data file and transmit only a single request for data.

Yaport discloses data distribution over the channels of one of the channel groups, e.g., 130, so as

to transfer to clients of a particular group of multicast groups, [0031] for, a plurality of individual

sessions occurs between individual clients and the server(s) consisting of unicast transmission:

[0014], [0016], [0020].

Regarding claim 97, *the receivers transmit uplink transmissions regarding the multicast*

transmission only after they collected from the multicast channel all the data from the multicast

channel used in reconstruction the multicast transmission. Cai discloses [0028] uplink 135 that

includes multiple communication channels, comprising [0031], one or more of multiple time slots in a same frequency bandwidth.

Therefore, it would have been obvious to a person of ordinary skill at the time the invention was made to implement Yaport with the teaching of Cai so that receivers can particularly select one or more multicast group

Regarding claim 98, Yaport does not explicitly discloses that *at least one of the receivers requests the one or more keys from an entity belonging to a different mobile network,*

Cai discloses (multiple softkeys such softkeys corresponding to keys on a conventional telephone keypad: [0030], [0036]). Therefore, it would have been obvious to a person of ordinary skill at the time the invention was made to implement Yaport with the teaching of Cai so that receivers can particularly select one or more multicast group so as to provide a response to server indicating a desire of a user of the MS to subscribe to the event)

7.   Claim 93 rejected under 35 U.S.C. 103(a) as being unpatentable over Yaport in view of Cai and further in view of Tasman et al. (US 2002/0080755 A1).

Regarding claim 93, *transmitting the data file comprises transmitting the file protected with a forward error correction code.*

Yaport teaches the claimed invention except explicitly transmitting the file protected with a forward error correction code.

Tasman, [0048], in disclosing a mechanism for forwarding layer interfacing for networks, teaches encoding resulting in forward error correction (FEC). It would have been obvious to a

person of ordinary skill at the time the invention was made to modify Yaport with Tasman to

incorporate forward error correction (FEC), for (FEC) software may reduce the number of

retransmissions by alleviating some portion of the data packet loss.

Allowable Subject Matter

8.   Claims 66-73 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to EMMANUEL MAGLO whose telephone number is (571)270-

1854. The examiner can normally be reached on Monday - Thursday 7:00 - 4:30 and every other

Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William Trost can be reached on (571)272-7872. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Trost/
Supervisory Patent Examiner, Art Unit 2472

Emmanuel Maglo
Patent Examiner
February 23, 2010